

What is claimed is:

1. A data storage system, comprising:

a first disk drive unit;

a second disk drive unit, coupled to the first disk drive unit by a bus;

5 a main cache memory, coupled to the bus, that caches data from at least one of the first disk drive unit and the second disk drive unit; and

a secondary memory, provided as part of the first disk drive unit, wherein the secondary memory has at least two sections, a first section used by the first disk drive unit to facilitate disk accesses and a second section used to cache data from the second disk drive unit.

2. A disk drive unit, comprising:

an interface that communicates data to and from the disk drive unit;

a disk platter that stores data; and

a controller coupled to said interface and said disk platter, the controller providing

15 and accepting data signals that control the disk drive unit and communicate data therewith, wherein said controller includes a memory having a portion that is useable as cache for data that is not stored on said disk platter.

3. A data storage device comprising:

onboard volatile memory; and

20 a section of onboard volatile memory associated with the data storage device and used as a cache including data cached from at least one other data storage device.

4. The data storage device of Claim 3, wherein the data storage device is a first disk drive unit and said section of onboard volatile memory includes data cached from at least a second disk drive unit.

5. The data storage device of Claim 4, wherein said section of onboard volatile memory includes data cached from said first disk drive unit.

6. The data storage device of Claim 3, further comprising:
an interface that provides and accepts data;
a disk platter that stores data; and
a controller that handles communication between said interface and said disk platter, wherein said onboard volatile memory is part of said controller.

7. The data storage device of Claim 6, further comprising:
a processor of said data storage device;
an other section of onboard volatile memory associated with the said data storage device in which said processor uses said other section of onboard volatile memory in connection with accessing data stored on said disk platter.

8. A data storage system comprising:

a first disk drive including a section of onboard memory associated with the first disk drive;

a second disk drive that provides data to the first disk drive; and

5 memory for caching data of the data storage system, said memory including said section of onboard memory associated with said first disk drive wherein said section includes a portion of data cached from at least said second disk drive.

9. The data storage system of Claim 8, wherein said section of onboard memory includes a portion of data that is not duplicated elsewhere in said data storage system.

10 10. The data storage system of Claim 8, wherein said section of onboard memory includes a portion of data that is duplicated elsewhere in said data storage system.

11. The data storage system of Claim 10, wherein said memory for caching includes a portion of system memory of said data storage system.

12. The data storage system of Claim 11, further comprising:

15 a command generator that generates at least one command for performing a data operation in connection with caching data of said system memory and at least one command for performing a data operation in connection with caching data of said section of onboard memory.

13. The data storage system of Claim 11, further comprising:

a first command generator that generates at least one command for performing a data operation in connection with caching data of said system memory; and

5 a second command generator different from said first command generator that generates at least one command for performing a data operation in connection with caching data of said section of onboard memory.

14. The data storage system of Claim 8, further comprising:

a command generator that generates at least one command for performing a data operation in connection with data caching of said section of onboard memory.

10 15. The data storage system of Claim 14, further comprising:

a host interface unit that includes said command generator, said host interface unit being connected to a host computer system.

16. The data storage system of Claim 14, further comprising:

a disk interface unit for interfacing with said first disk drive.

15 17. The data storage system of Claim 14, wherein said command generator executes on a dedicated computer processor.

18. The data storage system of Claim 14, further comprising:

system cache memory included in a system memory associated with said data storage system, wherein said command generator generates commands for performing a data operation in connection with caching data to said system cache memory.

5 19. The data storage system of Claim 18, further comprising:

a command interpreter that interprets commands in connection with a data caching operation of one at least one of said section of onboard memory and said system cache memory.

20. A method of caching data, comprising:

10 obtaining data from a first disk drive unit; and

storing at least a portion of the data on volatile memory that is part of a second disk drive unit different from the first disk drive unit.

21. The method of Claim 20, further comprising:

15 storing a second portion of the data from the first disk drive unit in system memory associated with a data storage device that includes said first disk drive unit and said second disk drive unit.

22. The method of Claim 21, further comprising:

issuing commands from a command generator for storing said second portion of data in the system memory and storing said first portion of data in the memory of the second disk drive unit.

5 23. The method of Claim 21, further comprising:

issuing commands from a first command generator for storing said second portion of data in the system memory; and

issuing commands from a second command generator different from the first command generator for storing said first portion of data in the memory of the second disk drive unit.

24. The method of Claim 21, wherein at least one of said first and said second portions includes data that is not duplicated elsewhere in the data storage device.

25. The method of Claim 21, wherein at least one of said first and said second portions includes data that is duplicated elsewhere in the data storage device

15 26. A computer program product for caching data, comprising:

machine executable code for obtaining data from a first disk drive unit; and

machine executable code for storing data on memory of a second disk drive unit different from the first disk drive unit.

27. The computer program product of Claim 26, further comprising:

machine executable code for storing a second portion of the data from the first disk drive unit in system memory associated with a data storage device that includes said first disk drive unit and said second disk drive unit.

5 28. The computer program product of Claim 27, further comprising:

machine executable code for issuing commands from a command generator for storing said second portion of data in the system memory and storing said first portion of data in the memory of the second disk drive unit.

29. The computer program product of Claim 27, further comprising:

10 machine executable code for issuing commands from a first command generator for storing said second portion of data in the system memory; and

machine executable code for issuing commands from a second command generator different from the first command generator for storing said first portion of data in the memory of the second disk drive unit.

15 30. The computer program product of Claim 27, wherein at least one of said first and said second portions includes data that is not duplicated elsewhere in the data storage device.

31. The computer program product of Claim 27, wherein at least one of said first and said second portions includes data that is duplicated elsewhere in the data storage device.